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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,641	12/22/2003	Chen-Chung S. Chang	EMSI 34180US2	7411
116	7590	12/13/2006	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			LAVILLA, MICHAEL E	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/743,641

Applicant(s)

CHANG ET AL.

Examiner

Michael La Villa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31, 34-46, 49, 50 and 53-55 is/are rejected.
- 7) ☒ Claim(s) 32, 33, 47, 48, 51 and 52 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
2. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 2-9, 11-18, 20, 21, 31, 34-36, 38, 42-44, and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Regarding Claims 2-9, 11-18, 20, 21, 31, 34-36, 38, and 50, it is unclear what is meant by the phrase "commercially pure" for the reasons of record in the Office Action mailed on 23 March 2006. Applicant argues that the claim limitation is to encompass pure materials to the extent that they are commercially available and that changes in commercial quality should be encompassed by claiming in this manner. By this argument, applicant is not claiming a defined material, rendering the claim indefinite. To describe a material on the basis of its availability for purchase at the time of practicing an invention does not state what it is made of. One of ordinary skill in the art cannot ascertain whether particular material is encompassed by this claim limitation by comparing the particular material to the claim language. This rejection applies to any other claim in which the phrase "commercially pure" is present that has been inadvertently omitted from this list of claims.

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5. Regarding Claim 16, it is unclear what is the antecedent basis of the phrase "said cold rolling" as there is no mention of "cold rolling" in Claim 11.
6. Regarding Claim 42, it is unclear what is meant by the phrase "the other of copper and nickel" for the reasons of record in the Office Action mailed on 23 March 2006. Applicant has traversed this rejection with an argument that exemplifies how the meaning could be ascertained. The traversal does not address the conflict presented when copper and nickel are both present. Moreover, it is predicated on reading the claim to require that the first mention of "the other of copper and nickel" necessarily is to be compared to the composition of the "first metallic layer," and the second mention necessarily is to be compared to the composition of the "fourth metallic layer." It is unclear why the claim must be read in this limiting manner.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
  8. A person shall be entitled to a patent unless –
  9. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
10. Claims 1, 4, 5, 11-13, 16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirano et al. USP 5,028,495 for the reasons of record in the Office Action mailed on 23 March 2006.

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11. Claims 1, 4, 5, 11-13, 16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Jha et al. USP 5,553,770 for the reasons of record in the Office Action mailed on 23 March 2006.
12. Claims 1-3, 7, 8, 10-13, 16, 19, 20, 22, 25, 26, 29, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Mennucci USP 5,761,799 for the reasons of record in the Office Action mailed on 23 March 2006.
13. Claims 1, 4, 5, 10, 11-16, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Galasso et al. USPN 4,034,454 for the reasons of record in the Office Action mailed on 23 March 2006.
14. Claims 1-30, 34-46, 49, 50, and 53-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirano et al. JP 4-006173 for the reasons of record in the Office Action mailed on 23 March 2006.

***Response to Amendment***

15. In view of applicant's amendments and arguments, applicant traverses the section 112, second paragraph rejection of the Office Action mailed on 23 March 2006. All rejections are withdrawn except for those repeated above for the reasons given above.
16. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Hirano '495, the section 102 rejection over Jha, and the section 102 rejection over Galasso of the Office Action mailed on 23 March 2006. Applicant argues that each of these references requires heat treatment and that applicant's products result from cold rolling without intermediate heat

treatment. Applicant argues that the heat treatment of the references leads to articles having compositional and structural differences as compared to articles formed by cold rolling without intermediate heat treatment. It is remarked that applicant's claims refer to "roll bonding," not to "cold rolling." Furthermore, applicant's claims are understood to require an absence of "intermediate heat treatment." Hence, other heat treatments are acceptable. Hirano '495 teaches cold rolling to form a sheet. While subsequent steps may involve annealing, the initially formed cold-rolled articles do not. Moreover, slight thickness reduction would be expected upon initial cold rolling. Since the claims permit hot rolling, applicant's arguments about necessary structural features that result from cold rolling without intermediate heat treatment are not persuasive. Jha teaches cold rolling without intermediate heat treatment. Only in later treatment steps is annealing performed in preparation for bonding to a stainless steel core. Galasso teaches electroplating nickel, which avoids the intermetallic compounds and protective gas issues. For at least these reasons, applicant's arguments are not persuasive, and so rejections are maintained.

17. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Mennucci '799 of the Office Action mailed on 23 March 2006. Applicant argues that Mennucci '799 teaches inclusion of platinum strips, which are not claimed by applicant. However, applicant's claims do not preclude the presence of these strips, and so the argument is not persuasive. Rejection is maintained.

18. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Hirano '173 of the Office Action mailed on 23 March 2006. Applicant argues that Hirano '173 does not disclose the formation of metallic bond between layers, nor that the articles of Hirano '173 were achieved by applicant's cold rolling without intermediate heat treatment. Hirano '173 teaches that the laminate is formed by cold rolling, followed by subsequent rolling steps that involve annealing. It would be expected that metallic bonds would be formed upon initial cold rolling and the subsequent steps also. See Hirano '173 (pages 4, 6, and 7) (translation). Since the claims permit hot rolling, applicant's arguments about necessary structural features that result from cold rolling without intermediate heat treatment are not persuasive. Applicant argues that the core structure of Hirano '173 is different from that of applicant. Hirano '173 teaches a Zr core and Ti layers centered in the coated laminates on each side. It appears that applicant's claims encompass these structures since they do not preclude Ti as a non-core layer material. For at least these reasons, applicant's arguments are not persuasive, and so rejections are maintained.

19. In view of applicant's amendments and arguments, applicant traverses the section 103 rejection over Ryan of the Office Action mailed on 23 March 2006. Rejection is withdrawn.

20. In view of applicant's amendments and arguments, applicant traverses the section 103 rejection over Mennucci '426 of the Office Action mailed on 23 March 2006. Rejection is withdrawn.

***Allowable Subject Matter***

21. Claims 32, 33, 47, 48, 51, and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
22. Claim 31 is would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.
24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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25. Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see [http://pair-](http://pair-direct.uspto.gov)

[direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR


system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

Michael La Villa  
8 December 2006

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER